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202206UECM3463OE1b

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Started on	Friday, 8 July 2022, 07:04 PM
Completed on	Friday, 8 July 2022, 07:04 PM
Time taken	15 secs
Grade	**0** out of a maximum of 10 (**0**%)

1
Marks: 1

The probability density function of loss amounts is given by

$f(x) = 3(410-x)^2/410^3$, $0 < x \leq 410$

An insurance coverage for these losses has an ordinary deductible of 100 Calculate the mean excees loss at 100. _____

Answer: ✗

Make comment or override grade

Incorrect
Correct answer: 77.5
Marks for this submission: 0/1.

2
Marks: 1

Let X be a discrete random variable with probability generating function

$P_X(z) = 0.53z^{200} + 0.17z^{600} + 0.13z^{1000} + 0.09z^{1400} + 0.08z^{1800}$

Calculate LER(1,100). _____

Answer: ✗

Make comment or override grade

Incorrect
Correct answer: 0.863487
Marks for this submission: 0/1.

3
Marks: 1

For an insurance coverage, lossess (before application of any deductible) follow a Pareto distribution with parameters α = 4 and θ =6000. The coverage is subject to a deductible of 600. Calculate the deductible needed to double the loss elimination ratio. _____

Answer: ✗

Make comment or override grade

Incorrect
Correct answer: 2463.305312
Marks for this submission: 0/1.

4
Marks: 1

An individual losses has the Pareto distribution with parameters α = 3 and θ = 280 with deductible of 56.1, coinsurance of 75% and a loss limit of 112.20 (before application of the deductible and coinsurance) are applied to each individual loss. Loss sizes are affected by 10% inflation. Determine the variance of the loss payment on the per payment basic. _____

Answer: [   ] ✗

Incorrect
Correct answer: 172.32
Marks for this submission: 0/1.

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5 ☑
Marks: 1

An insurance agent receives no bonus if his loss ratio is higher that 72%. Otherwise, he receives a bonus of 28% of his earned premium times the excess of 72% over his loss ratio, defined as losses divided by earned premium, but no more than 16.24% of his earned premium. Losses follow a Gamma distribution with $a = 2$ and $\theta = 5,400$. The agent's earned premium is 6,800. Calculate the expected value of his bonus. _____

Answer: [   ] ✗

Incorrect
Correct answer: 120
Marks for this submission: 0/1.

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6 ☑
Marks: 1

Annual losses follow a Pareto distribution with $a = 4.00$ and $\theta = 1,700$. Calculate $VaR_{0.953}$. _____

Answer: [   ] ✗

Incorrect
Correct answer: 1951.106128
Marks for this submission: 0/1.

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7 ☑
Marks: 1

Annual losses follow a Pareto distribution with parameters $a = 4$ and $\theta = 800$. $TVaR_p = 1,407$, Determine p. _____

Answer: [   ] ✗

Incorrect
Correct answer: 0.945436
Marks for this submission: 0/1.

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8 ☑
Marks: 1

The losses experienced by an insurance company have the following probability distribution:

Loss size	Probability
0	0.60
120	0.25
220	0.10
1,240	0.05

Calculate the $CTE_{0.69}$. _____

Answer: [   ] ✗

Incorrect
Correct answer: 332.903226
Marks for this submission: 0/1.

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9 ☑
Marks: 1

Losses follows a beta distribution with $\theta = 1,530$, $a = 3$, $b = 1$. Calculate $CTE_{0.98}$. _____

Answer: [   ] ✗

Incorrect

Correct answer: 1525.058573

Marks for this submission: 0/1.

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10 📝

Marks: 1

Losses follow a lognormal distribution with parameters μ = 5, σ = 2. Losses are subject to a 1100 franchise deductible. 10% inflation affects the losses. Calculate the revised franchise deductible so that the expected aggregate cost of claims after inflation with the deductible is the same as it was before inflation with the 1100 franchise deductible. _____

Answer: [   ] ✗

Incorrect
Correct answer: 2111.808567

Marks for this submission: 0/1.